ENVIRONMENTAL CHEMISTS

Date of Report: January 10, 1996 Date Received: December 28, 1995 Project: Acid Samples, PO #51771

Date Samples Extracted: January 3, 1996 Date Extracts Analyzed: January 4, 1995

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)

Samples Processed Using Method 3005 Results Reported as mg/L (ppm)

Sample ID	M51771A <u>Large Tank</u>	M51771B Small Tank	Method Blank
Analyte:			
Arsenic	6	9	<1
Cadmium	<0.5	<0.5	<0.5
Chromium	1,300	1,400	<0.5
Lead	1	5	<1
Iron	6,100	6,400	<10
Silver	<0.5	<0.5	<0.5
Copper	73	250	<0.5
Nickel	710	1,000	<0.5
Zinc	0.6	<0.5	<0.5

ENVIRONMENTAL CHEMISTS

Date of Report: January 10, 1996 Date Received: December 28, 1995 Project: Acid Samples, PO #51771

QUALITY ASSURANCE RESULTS FOR TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)

Laboratory Code: 65468 (Duplicate)

Analyte:	Reporting Units	Sample Result	Duplicate Result	Relative Percent <u>Difference</u>	Acceptance Criteria
Arsenic	mg/L (ppm)	9	9	0	0-20
Cadmium	mg/L (ppm)	< 0.5	< 0.5	nm	0-20
Chromium	mg/L (ppm)	1,400	1,500	7	0-20
Lead	mg/L (ppm)	5	5	0	0-20
Iron	mg/L (ppm)	6,400	6,800	6	0-20
Silver	mg/L (ppm)	< 0.5	< 0.5	nm	0-20
Copper	mg/L (ppm)	250	250	0	0-20
Nickel	mg/L (ppm)	1,000	1,100	10	0-20
Zinc	mg/L (ppm)	< 0.5	< 0.5	nm	0-20

Laboratory Code: Spike Blank

Analyte:	Reporting Units	Spike Level	% I MS	Recovery MSD	Acceptance Criteria	Relative Percent Difference
Arsenic	mad (num)	10	102	104	80-120	\mathbf{z}
Cadmium	mg/L (ppm) mg/L (ppm)	10 5	102	104	80-120 80-120	9
Chromium	mg/L (ppm)	5	105	103	80-120	1
Lead	mg/L (ppm)	10	103	105	80-120	2
Iron	mg/L (ppm)	10	103	103	80-120	0
Silver	mg/L (ppm)	2	98	101	50-150	3
Copper	mg/L (ppm)	5	103	101	80-120	1
Nickel	mg/L (ppm)	10	104	100	80-120	$\frac{1}{4}$
Zine	mg/L (ppm)	5	103	103	80-120	Ô

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

ENVIRONMENTAL CHEMISTS

Date of Report: January 10, 1996 Date Received: December 28, 1995 Project: Acid Samples, PO #51771

Date Extracts Analyzed: January 4, 1996

RESULTS FROM THE ANALYSIS OF PROCESS WATER SAMPLES FOR SPECIFIC GRAVITY

@ 15.56 °C

<u>Sample ID</u>	ecific Gravity
M51771A Large Tank	1.07
M51771B Small Tank	1.08

ENVIRONMENTAL CHEMISTS

Date of Report: January 10, 1996 Date Received: December 28, 1995 Project: Acid Samples, PO #51771

QUALITY ASSURANCE RESULTS FOR SPECIFIC GRAVITY @ 15.56 °C

Laboratory Code: 65468 (Duplicate)

	Sample	Dupl	licate	Relative Percent
Analyte:	Result	Res	sult	Difference
Specific Gravity	1.08	1.0	08	0

ENVIRONMENTAL CHEMISTS

Date of Report: January 10, 1996 Date Received: December 28, 1995 Project: Acid Samples, PO #51771

Date Extracts Analyzed: January 5, 1996

RESULTS FROM THE ANALYSIS OF PROCESS WATER SAMPLES FOR % ACID BY VOLUME

Sample ID			% Ac	id By	Volume
ha gama anga apita apita					
M51771A Large Tank				5.	0
M51771B Small Tank				7.	0

FRIEDMAN & BRUYA, INC. ENVIRONMENTAL CHEMISTS

Date of Report: January 10, 1996 Date Received: December 28, 1995 Project: Acid Samples, PO #51771

QUALITY ASSURANCE RESULTS FOR % ACID BY VOLUME

Laboratory Code: 65468 (Duplicate)

	Sample	Duplicate	Relative Percent
Analyte:	Result	Result	Difference
% Acid by Volume	7.0	7.0	0

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282



SAMPLE CHAIN OF CUSTODY

KNJ AI 12:28,95 1:35

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FORMS/COC

09/19/94

ENVIRONMENTAL CHEMISTS

Andrew John Friedman James E. Bruya, Ph.D. (206) 285-8282 3012 16th Avenue West Seattle, WA 98119-2029 FAX: (206) 283-5044

January 10, 1996

Gerry Thompson, Project Manager Alaskan Copper Works 628 South Hanford Seattle, WA 98134

Dear Mr. Thompson:

Enclosed are the results from the testing of material submitted on December 28, 1995 from your Acid Samples, PO #51771 project.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Kurt Johnson Chemist

keh

Enclosures

FAX: 382-7335 ACU0110R.DOC

ENVIRONMENTAL CHEMISTS

Andrew John Friedman James E. Bruya, Ph.D. (206) 285-8282 3012 16th Avenue West Seattle, WA 98119-2029 FAX: (206) 283-5044

January 10, 1996

INVOICE # 96ACU0110-2 DUPLICATE COPY

Accounts Payable Alaskan Copper Works 628 South Hanford Seattle, WA 98134

RE: Project Acid Samples, PO #51771: Results of testing requested by Gerry Thompson, Project Manager for material submitted on December 28, 1995.

2 water samples analyzed for Total Metals by Method 6010 @ \$115 per sample	\$ 230.00
2 process water samples analyzed for Specific Gravity @ \$25 per sample	50.00
2 process water samples analyzed for % Acid By Volume	50.00
@ \$25 per sample Amount Due	50.00 \$ 330.00